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ABSTRACT

Delivering heat from modern high temperature solar collectors to storage tanks is more effectively done using a pressurized, high temperature fluid loop using non-flammable and low toxicity heat transfer fluids and is the subject of this patent. Non-toxic water/antifreeze mixtures can be used in pressurized (14#, (14 Pounds Square Inch pressure above atmosphere)) systems up to 265 degrees Fahrenheit before the mixture boils. Boiling under pressure transports either steam or heat out of the closed system. The steam must be condensed and returned to the closed loop system to keep it full. In order to accomplish this in a practical manner a pressurizing cap and overflow reservoir are used. The system will either shed excess heat collected by boiling or limit the heat input from the collector panel by increasing its heat loss due to increasing solar collector temperature above ambient.